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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/828,504

04/21/2004

John Scheirs

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11/22/2005

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EXAMINER

ROSSI, JESSICA

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,504

Applicant(s)

SCHEIRS ET AL.

Examiner

Jessica L. Rossi

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/31/05, Amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-31 and 33-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-31 and 33-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/31/05, 8/1/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment dated 8/31/05. Claims 15 and 32 were cancelled. Claims 48-61 were added. Claims 1-14, 16-31 and 33-61 are pending.

Election/Restrictions

2. The restriction requirement set forth in paragraphs 1-5 of the previous action dated 4/1/05 has been withdrawn in light of Applicant's arguments presented on p. 10 of the remarks dated 8/31/05.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file (see foreign priority papers filed on 8/1/05).

Oath/Declaration

4. The statement made in paragraph 7 of the previous action regarding the present oath/declaration being defective has been withdrawn in light of Applicant's remarks set forth in the last paragraph on p. 11 of the remarks.

Previous Rejections

5. The rejection of claims 36 and 39 under 35 USC 102(b) as being anticipated by Baudin, as set forth in paragraph 9 of the previous action, has been withdrawn in light of the present amendment to claim 36; Baudin is silent as to the polyurethane adhesive being formed from a material comprising an emulsion.

6. The rejection of claims 36 and 39 under 35 USC 102(b) as being anticipated by Jang, as set forth in paragraph 10 of the previous action, has been withdrawn in light of the present

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amendment to claim 36; Jang is silent as to the polyurethane adhesive coating being formed from a material comprising an emulsion.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1, 3-14, 19, 21-31, 36, 38-44 and 46-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chevreux (AU 568608; cited in IDS) in view of the collective teachings of LeGrand et al. (US 4894282) and LeGrand et al. (US 4683172) and further in view of Nagata et al. (US 6638388).

With respect to claims 1, 4-6, 10-11, 19, 22-24, 28, 36, 39-44, 46-50, 54-55, Chevreux teaches a laminated glass comprising two glass sheets, a PVC interlayer located between the two glass sheets and an adhesive layer between the interlayer and each of the glass sheets, wherein the adhesive layers are formed from a material comprising a combination of polyurethane and polyester (p. 7, 2nd paragraph, p. 12, 3rd paragraph, p. 18, 1st-3rd paragraphs). The reference is silent as to the adhesives being formed from waterborne or water reducible emulsions.

It is known in the laminated glass art to improve the bond between a thermoplastic interlayer and two glass sheets by locating an adhesive between the interlayer and the two glass sheets, wherein the adhesive can be coated onto both sides of the interlayer in the form of an aqueous emulsion (aqueous means “relating to, similar to, containing, or dissolved in water”; therefore, an aqueous emulsion is a waterborne or water reducible emulsion), as taught by the collective teachings of LeGrand ‘282 (column 1, lines 33-56; column 2, lines 25-36; column 3, lines 38-41; column 4, lines 51-56) and LeGrand ‘172 (column 3, lines 21-25 and 49-52 – only

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relied on for its teaching of coating a pressure sensitive or non-pressure sensitive adhesive in the form of an aqueous emulsion onto an interlayer). Furthermore, it is known in the adhesive art to apply a polyurethane or polyester adhesive coating onto a PVC substrate, wherein the adhesive is coated onto the PVC in the form of an aqueous emulsion, as taught by Nagata (column 3, lines 30-35 and 59-63; column 5, lines 13-25; column 10, lines 14-30).

Therefore, since Chevreux teaches the adhesive being applied in fluid form (see claim 1 and p. 18, last paragraph), it would have been obvious to the skilled artisan to coat the adhesive onto the interlayer of Chevreux in the form of a waterborne or water reducible emulsion because such is a known technique for applying an adhesive coating onto an interlayer in the laminated glass art, as taught by the collective teachings of LeGrand '282 and '172, and applying polyurethane and polyester adhesive coatings onto PVC substrates in the form of a waterborne or water reducible emulsion is known in the adhesive art, as taught by Nagata, where applying the adhesive as a coating eliminates having to process the adhesive layer separately and then bond it to the interlayer and where using a waterborne or water reducible emulsion is more environmentally sound since only water is released during the drying process.

Regarding claims 3, 21, 38 and 46, selection of an adhesive having certain physical characteristics would have been within purview of the skilled artisan. It being noted that polyurethane and polyester adhesive layers having such a glass transition temperature are well known in the laminated glass art.

Regarding claims 7-9, 12-14, 25-27, 29-31, 51-53, 56-58, Chevreux teaches such.

9. Claims 2, 20, 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chevreux, the collective teachings of LeGrand '282 and LeGrand '172 and also Nagata as

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applied to claims 1, 19, 36 and 43 above, and further in view of Isaksen et al. (US 2984593, of record).

Regarding claims 2, 20, 37 and 45, Chevreux is silent as to annealing the PVC before bonding. It is generally known in the PVC material art to anneal the PVC before its use in a heating process because the annealed state allows the PVC to resist shrinkage when subjected to elevated temperatures, as taught by Isaksen (column 1, lines 15-20 and 42-46; column 4, lines 50-55; claim 1).

Therefore, it would have been obvious to the skilled artisan at the time of the invention to anneal the PVC interlayer of Chevreux before bonding it to the glass sheets because this would prevent shrinking of the PVC during lamination, as taught by Isaksen, where shrinking of the PVC during bonding would be detrimental to the integrity of the laminate.

10. Claims 16, 33 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chevreux, the collective teachings of LeGrand '282 and LeGrand '172 and also Nagata as applied to claims 1, 19 and 36 above, and further in view of Parker et al. (US 5593786).

Regarding claims 16, 33 and 59, Chevreux is silent as to the adhesive containing such additives. However, it would have been obvious to include one or more of the claimed additives in the adhesive of Chevreux because it is known to include such additives in an adhesive that is used to bond a PVC interlayer to two glass sheets, as taught by Parker (column 2, lines 23-34; column 3, lines 24-27; column 7, lines 14-16), and where such additives impart certain desirable characteristics to the adhesive.

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11. Claims 17-18, 34-35 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chevreux, the collective teachings of LeGrand '282 and LeGrand '172 and also Nagata as applied to claims 1, 19 and 36 above, and further in view of Jang et al. (EP 1112840, of record).

Regarding claims 17-18, 34-35 and 60-61, it would have been obvious to use an adhesive the claimed thickness because such known in the laminated glass art when coating the adhesive onto a PVC interlayer, as taught by Jang (p. 3, section [0018]).

12. Claims 1, 3-7, 17-19, 21-25, 34-36, 38-44, 46-51 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang et al. in view of the collective teachings of LeGrand et al. '282 and LeGrand et al. '172 and further in view of Nagata et al.

With respect to claims 1, 4-7, 19, 22-24, 36, 39-44 and 47-50, Jang teaches a laminated glass comprising two glass sheets, a PVC interlayer located between the two glass sheets and an adhesive layer between the interlayer and each of the glass sheets, wherein the adhesive layers can be formed from a variety of materials including polyurethane (Figure 1; section [0016-0018]). The reference is silent as to the adhesives being formed from waterborne or water reducible emulsions.

It is known in the laminated glass art to improve the bond between a thermoplastic interlayer and two glass sheets by locating an adhesive between the interlayer and the two glass sheets, wherein the adhesive can be coated onto both sides of the interlayer in the form of an aqueous emulsion (aqueous means "relating to, similar to, containing, or dissolved in water"; therefore, an aqueous emulsion is a waterborne or water reducible emulsion), as taught by the collective teachings of LeGrand '282 (column 1, lines 33-56; column 2, lines 25-36; column 3, lines 38-41; column 4, lines 51-56) and LeGrand '172 (column 3, lines 21-25 and 49-52 – only

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relied on for its teaching of coating a pressure sensitive or non-pressure sensitive adhesive in the form of an aqueous emulsion onto an interlayer). Furthermore, it is known in the adhesive art to apply a polyurethane or polyester adhesive coating onto a PVC substrate, wherein the adhesive is coated onto the PVC in the form of an aqueous emulsion, as taught by Nagata (column 3, lines 30-35 and 59-63; column 5, lines 13-25; column 10, lines 14-30).

Therefore, since Jang teaches the adhesive being coated onto the PVC interlayer (section [0018]), it would have been obvious to the skilled artisan to coat the adhesive onto the interlayer of Jang in the form of a waterborne or water reducible emulsion because such is a known technique for applying an adhesive coating onto an interlayer in the laminated glass art, as taught by the collective teachings of LeGrand '282 and '172, and applying polyurethane or polyester adhesive coatings onto PVC substrates in the form of a waterborne or water reducible emulsion is known in the adhesive art, as taught by Nagata, where applying a coating in the form of a waterborne or water reducible emulsion is more environmentally sound since only water is released during the drying process.

Regarding claims 3, 21, 38 and 46, selection of an adhesive having certain physical characteristics would have been within purview of the skilled artisan. It being noted that polyurethane adhesive layers having such a glass transition temperature are well known in the laminated glass art.

Regarding claims 17-18, 34-35 and 60-61, Jang teaches the adhesive having a thickness that falls within Applicant's claimed range (section [0018]).

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Regarding claims 25 and 51, one reading Jang as a whole would have appreciated that the reference is not concerned with a particular adhesive (section 0018]) and therefore selection of a particular polyurethane would have been within purview of the skilled artisan.

13. Claims 2, 20, 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang the collective teachings of LeGrand '282 and LeGrand '172 and also Nagata as applied to claims 1, 19, 36 and 43 above, and further in view of Isaksen.

Regarding claims 2, 20, 37 and 45, Jang is silent as to annealing the PVC before bonding. It is generally known in the PVC material art to anneal the PVC before its use in a heating process because the annealed state allows the PVC to resist shrinkage when subjected to elevated temperatures, as taught by Isaksen (column 1, lines 15-20 and 42-46; column 4, lines 50-55; claim 1).

Therefore, it would have been obvious to the skilled artisan at the time of the invention to anneal the PVC interlayer of Jang before bonding it to the glass sheets because this would prevent shrinking of the PVC during lamination, as taught by Isaksen, where shrinking of the PVC during bonding would be detrimental to the integrity of the laminate.

14. Claims 8-14, 26-30 and 52-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang, the collective teachings of LeGrand '282 and LeGrand '172 and also Nagata as applied to claims 1, 4, 7, 23, 25, 36, 39 and 51 above, and further in view of Chevreux.

Regarding claims 8-14, 26-30 and 52-58, one reading Jang as a whole would have appreciated that the reference is not limited to a particular adhesive (section [0018]). Therefore, selection of an adhesive would have been within purview of the skilled artisan. However, it would have been obvious to use an adhesive that is a combination of polyurethane and polyester

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because such is a known adhesive for bonding a PVC interlayer to two glass sheets, as taught by Chevreux (see paragraph 8 above for detailed description).

15. Claims 16, 33 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang, the collective teachings of LeGrand '282 and LeGrand '172 and also Nagata as applied to claims 1, 19 and 36 above, and further in view of Parker.

Regarding claims 16, 33 and 59, Jang is silent as to the adhesive containing such additives. However, it would have been obvious to include one or more of the claimed additives in the adhesive of Jang because it is known to include such additives in an adhesive that is used to bond a PVC interlayer to two glass sheets, as taught by Parker (column 2, lines 23-34; column 3, lines 24-27; column 7, lines 14-16), and where such additives impart certain desirable characteristics to the adhesive.

16. Claims 1, 3-7, 17-19, 21-25, 34-36, 38-44, 46-51 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudin (US 4842664, of record) in view of the collective teachings of LeGrand et al. '282 and LeGrand et al. '172 and further in view of the collective teachings of Jang et al. and Nagata et al.

With respect to claims 1, 4-7, 19, 22-24, 36, 39-44 and 47-50, Baudin teaches a laminated glass comprising two glass sheets, a PVC interlayer (Figure 4; column 6, lines 18-27 - with close attention to lines 25-27) located between the two glass sheets and an adhesive layer between the interlayer and each of the glass sheets, wherein the adhesive layers can be formed from polyurethane (Figure 4; column 11, lines 34-47; column 12, lines 3-6 and 38-42). The reference is silent as to the adhesives being formed from waterborne or water reducible emulsions.

It is known in the laminated glass art to improve the bond between a thermoplastic interlayer and two glass sheets by locating an adhesive between the interlayer and the two glass sheets, wherein the adhesive can be coated onto both sides of the interlayer in the form of an aqueous emulsion (aqueous means “relating to, similar to, containing, or dissolved in water”; therefore, an aqueous emulsion is a waterborne or water reducible emulsion), as taught by the collective teachings of LeGrand ‘282 (column 1, lines 33-56; column 2, lines 25-36; column 3, lines 38-41; column 4, lines 51-56) and LeGrand ‘172 (column 3, lines 21-25 and 49-52 – only relied on for its teaching of coating a pressure sensitive or non-pressure sensitive adhesive in the form of an aqueous emulsion onto an interlayer). Furthermore, it is also known in the laminated glass art to bond a PVC interlayer to two glass sheets using a variety of adhesives, including polyurethane, that are applied as a coating to the PVC, as taught by Jang (sections [0016-0018]), while it is also known in the adhesive art to apply a variety of adhesives, including polyurethane and polyester, as a coating onto a PVC substrate, wherein the adhesive is coated onto the PVC in the form of an aqueous emulsion, as taught by Nagata (column 3, lines 30-35 and 59-63; column 5, lines 13-25; column 10, lines 14-30).

One reading Baudin as a whole would have appreciated that the reference is not concerned with a particular adhesive and/or how the adhesive is applied to the interlayer; therefore, it would have been obvious to the skilled artisan to coat the polyurethane adhesive onto the interlayer of Baudin in the form of a waterborne or water reducible emulsion because such is a known technique for applying an adhesive coating onto an interlayer in the laminated glass art, as taught by the collective teachings of LeGrand ‘282 and ‘172, and applying polyurethane adhesive coatings onto PVC substrates in the form of a waterborne or water

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reducible emulsion is known in the adhesive art, as taught by the collective teachings of Jang and Nagata, where applying the adhesive as a coating eliminates having to process the adhesive layer separately and then bond it to the interlayer and where using a waterborne or water reducible emulsion is more environmentally sound since only water is released during the drying process.

Regarding claims 3, 21, 38 and 46, selection of an adhesive having certain physical characteristics would have been within purview of the skilled artisan. However, it would have been obvious to use a polyurethane adhesive having a glass transition temperature within the claimed range since Baudin teaches heating the laminate within this range to bond the interlayer to the glass sheets (column 11, lines 26-50).

Regarding claims 17-18, 34-35 and 60-61, it would have been obvious to use an adhesive the claimed thickness because such known in the laminated glass art when coating the adhesive onto a PVC interlayer, as taught by Jang (p. 3, section [0018]).

Regarding claims 25 and 51, one reading Baudin as a whole would have appreciated that the reference is not concerned with a particular adhesive and therefore selection of a particular polyurethane would have been within purview of the skilled artisan.

17. Claims 2, 20, 37 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudin, the collective teachings of LeGrand '282 and LeGrand '172 and the collective teachings of Jang and Nagata as applied to claims 1, 19, 36 and 43 above, and further in view of Isaksen.

Regarding claims 2, 20, 37 and 45, Baudin is silent as to annealing the PVC before bonding. It is generally known in the PVC material art to anneal the PVC before its use in a heating process because the annealed state allows the PVC to resist shrinkage when subjected to

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elevated temperatures, as taught by Isaksen (column 1, lines 15-20 and 42-46; column 4, lines 50-55; claim 1).

Therefore, it would have been obvious to the skilled artisan at the time of the invention to anneal the PVC interlayer of Baudin before bonding it to the glass sheets because this would prevent shrinking of the PVC during lamination, as taught by Isaksen, where shrinking of the PVC during bonding would be detrimental to the integrity of the laminate.

18. Claims 8-14, 26-30 and 52-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudin, the collective teachings of LeGrand '282 and LeGrand '172 and the collective teachings of Jang and Nagata as applied to claims 1, 4, 7, 23, 25, 36, 39 and 51 above, and further in view of Chevreux.

Regarding claims 8-14, 26-30 and 52-58, one reading Baudin as a whole would have appreciated that the reference is not limited to a particular adhesive; therefore, selection of an adhesive would have been within purview of the skilled artisan. However, it would have been obvious to use an adhesive that is a combination of polyurethane and polyester because such is a known adhesive for bonding a PVC interlayer to two glass sheets, as taught by Chevreux (see paragraph 8 above for detailed description).

19. Claims 16, 33 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baudin, the collective teachings of LeGrand '282 and LeGrand '172 and the collective teachings of Jang and Nagata as applied to claims 1, 19 and 36 above, and further in view of Parker.

Regarding claims 16, 33 and 59, Baudin is silent as to the adhesive containing such additives. However, it would have been obvious to include one or more of the claimed additives in the adhesive of Baudin because it is known to include such additives in an adhesive that is

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used to bond a PVC interlayer to two glass sheets, as taught by Parker (column 2, lines 23-34; column 3, lines 24-27; column 7, lines 14-16), and where such additives impart certain desirable characteristics to the adhesive.

Response to Arguments

20. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**JESSICA ROSSI
PRIMARY EXAMINER**

Jessica Rossi